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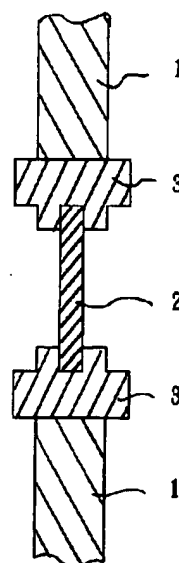
(54)【発明の名称】 プラズマ処理装置用窓部材

(57)【要約】

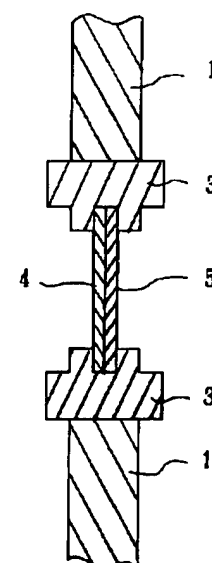
【課題】従来の石英やサファイアなどのプラズマ処理装置用窓部材では、プラズマに対する耐腐食性が十分でなく、耐久性に劣るものであった。

【解決手段】プラズマ処理装置の壁体の一部に設けられ、一方の表面がプラズマに直接曝される窓部材であって、該窓部材を、厚さ0.5～10.0mmの透光性イットリウム-アルミニウム-ガーネット焼結体により構成するか、あるいは透光性を有する基板の少なくともプラズマに曝される表面に、厚さ0.1～10.0mmの透光性イットリウム-アルミニウム-ガーネット焼結体を接合した構造体によって形成する。

(a)



(b)



ATTORNEY-CLIENT PRIVILEGED COMMUNICATION

Tom,

Here is one of several data summaries from Japanese patent applications.

((71)Applicant:	KYOCERA CORP
21)Application number: 10018839		
(22)Date of filing: 30.01.1998	(72)Inventor:	ITOU YUMIKO AIDA HIROSHI

(54) WINDOW MEMBER FOR PLAZMA PROCESSING UNIT

(57)Abstract:

PROBLEM TO BE SOLVED: To elongate the life without deteriorating light transmittivity caused by the surface corrosion by the plasma, while comprising the function as a window for light transmittivity by forming a window member by a light transmitting yttrium-aluminium-garnet sintered body (light transmitting YAG sintered body) having a specific thickness.

SOLUTION: A window member 2 is mounted on a side wall 1 by a support member 1. The window member 2 is formed by a light transmitting YAG sintered body. It is necessary that the thickness of the light transmitting YAG sintered body is 0.5-10.0 mm. When the thickness is less than 0.5 mm, the mechanical strength is not enough to a plasma processing unit of which the inside is in vacuum. When the thickness is more than 10.0 mm, the light transmittivity becomes less than 50%/mm, and the light transmittivity is lowered to be insufficient for the practical use. Whereby the window member superior in the durability to the plasma or the like, having the long life in comparison with quartz and sapphire materials, and free from deterioration can be provided.

Etch condtions: 1kW, 10Pa, 100sccm gas flows

Optical transmission Etch gas Etch rate Appearance Post-etch Rating (% transmitted/mm) (% transmitted/mm)								
	窓部材	透過率 (処理前) (%/mm)	プラズマガス 種	エッチング 率 (A/min)	表面状態	透過率 (処理後) (%/mm)	評価	
artz	* 1 石英	95	SF ₆	1000	白く曇る	25	×	White haze
	* 2 "	95	Cl ₂	800	白く曇る	25	×	
	* 3 "	95	Ar	50	白く曇る	40	×	
phire	* 4 97717	95	SF ₆	35	着色	60	△	Color chan
	* 5 "	95	Cl ₂	110	白く曇る	35	×	White haze
	* 6 "	95	Ar	50	変化なし	70	△	No effect
ransparen alumina	* 7 7831+	90	SF ₆	50	着色	55	△	Color chang
	* 8 "	90	Cl ₂	100	曇る	30	×	Haze
	* 9 "	90	Ar	40	変化なし	65	△	No effect
	* 10 AlN	85	SF ₆	40	着色	55	△	Color chang
	* 11 "	85	Cl ₂	150	曇る	30	×	Haze
	* 12 "	85	Ar	50	曇る	40	×	
	13 YAG	80	SF ₆	6	変化なし	80	○	No effect
	14 "	80	Cl ₂	30	変化なし	75	○	
	15 "	80	Ar	15	変化なし	75	○	
	16 "	90	SF ₆	2	変化なし	90	○	
	17 "	90	Cl ₂	15	変化なし	85	○	
	18 "	90	Ar	10	変化なし	85	○	

* 印は本発明の範囲外の試料を示す。